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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,377

04/27/2006

Peter Hubert Windmuller

4662-129

4401

23117

7590

11/01/2007

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EXAMINER

LU, C CAIXIA

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,377	<b>Applicant(s)</b> WINDMULLER ET AL.	
	<b>Examiner</b> Caixia Lu	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 5, 2007 has been entered.
2. It is noted that applicants have requested to elect the catalyst  $\eta^5$ - (perfluorophenylcyclopentadienyl)(tri-*tert*-butylphosphinimine) titanium dimethyl as the elected catalyst complex species for examination. Applicants are reminded that the original elected species must be cancelled since the claimed process defined by the previous elected species has been finally rejected.

### ***Specification***

3. The disclosure is objected to because of the following informalities: (i) in lines 8-9 of page 9, the compound "5-ethylene-2-norbornene" appears to be "5-ethylidene-2-norbornene"; and (ii) in line 19 of page 12, the term "were" appears to be "where".

Appropriate correction or correction is required.

### ***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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5. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoang et al. (US 6,583,082) in view of Gillis et al. (WO 97/38019).

The instant claims are directed to a process for preparation of ethylene/ $\alpha$ -olefin/vinyl norbornene in the presence of catalyst composition comprising a phosphinimine ligand containing Group IVB metallocene catalyst and an alumoxane cocatalyst.

Hoang teaches a high activity catalyst composition for ethylene polymerization comprising a phosphinimine ligand containing Group IVB metallocene catalyst and alumoxane cocatalyst (col. 2, lines 23-40; col. 5, lines 9-25; col. 9, lines 27-28; and Col. 13, Example 9).

While Hoang does not expressly teach the copolymerization of ethylene/ $\alpha$ -olefin/vinyl norbornene terpolymer, preparation of ethylene/ $\alpha$ -olefin/vinyl norbornene terpolymer in the presence of a metallocene catalyst is well established in industry, and such is shown in Gillis (page 2, lines 5-6 and 27-28; and abstract).

Thus, it would have been obvious to a skilled artisan at the time the invention was made to employ Hoang's teaching to copolymerize ethylene,  $\alpha$ -olefin, vinyl norbornene in searching for a more effective catalyst and thus lower the cost for ethylene/ $\alpha$ -olefin/vinyl norbornene elastomer production in industry and in the absence of any showing criticality and unexpected results.

Applicants' disclosure of Example 4 and Comparative Example 3 is noted. It is the examiner's position that Example 4 and Comparative Example 3 are not comparable in that the amounts of monomers used in of those two examples are very different and

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the catalyst used in those two examples are different as well. Therefore, meaningful conclusion cannot be reached at this point. Even if there is showing of criticality and unexpected results in the comparison of Example 4 and Comparative Example 3, the showing is still not commensurate with the scope of the instant claims because the metallocene catalyst 2 with a polar perfluorophenyl substituent on the cyclopentadienyl ring is not representative of metallocene catalyst of the instant claims. Furthermore, Example 3 has a much lower  $\Delta\delta$  of 1.5 compared to Example 4 with  $\Delta\delta$  of 9.0. Example 3 and 4 appear to be comparable, however, invention Example 3 shows much higher long chain branching compared to invention Example 4. That is, the claimed process does not always produce the terpolymer with low level of long chain branching.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.



Caixia Lu, Ph. D.  
Primary Examiner